



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,112	03/12/2004	Yuxiang May Wang	008245/DSM/BCVD	8920
44257	7590	07/25/2006	EXAMINER	
PATTERSON & SHERIDAN, LLP 3040 POST OAK BOULEVARD, SUITE 1500 HOUSTON, TX 77056			DAHIMENE, MAHMOUD	
			ART UNIT	PAPER NUMBER
			1765	
DATE MAILED: 07/25/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Advisory Action</b> <b>Before the Filing of an Appeal Brief</b>	Application No. 10/800,112	Applicant(s) WANG ET AL.	
	Examiner Mahmoud Dahimene	Art Unit 1765	

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 24 May 2006 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.  
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

#### AMENDMENTS

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because  
(a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);  
(b) ☐ They raise the issue of new matter (see NOTE below);  
(c) ☒ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: See Continuation Sheet. (See 37 CFR 1.116 and 41.33(a)).

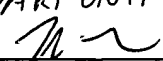
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).  
5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.  
The status of the claim(s) is (or will be) as follows:  
Claim(s) allowed: \_\_\_\_\_.  
Claim(s) objected to: \_\_\_\_\_.  
Claim(s) rejected: 1-22.  
Claim(s) withdrawn from consideration: \_\_\_\_\_.

#### AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).  
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).  
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

#### REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:  
See Continuation Sheet.  
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). \_\_\_\_\_.  
13. ☐ Other: \_\_\_\_\_.

NADINE NORTON  
SUPERVISORY PATENT EXAMINER  
ART UNIT 1765  


Continuation of 3. NOTE: The newly added limitation of "an aluminum-containing layer", as recited in amended claims 1 and 9, raise new issue that would require further consideration because they change the scope of claims 1 and 9 as well as dependent claims 3-8 and 10-18.

Continuation of 11. does NOT place the application in condition for allowance because:

Regarding the argument in reference of claims 19-22 (pages 9-10), as discussed in the final rejection filed on 4/5/2006, the reference of Dakshina-Murthy discloses forming an amorphous carbon hardmask (60) (figure 4) with an arc layer (70) on top, both layers are patterned with a photoresist mask (80), and the resist mask is removed after etching the ARC and amorphous carbon mask. Selectively etching layers underlying the carbon layer (figure 9), and removing the carbon mask layer in step (310) (figure 10) using an oxygen containing plasma.

Yang discloses C<sub>2</sub>H<sub>4</sub> and C<sub>2</sub>H<sub>6</sub> gases for forming an amorphous carbon film with a dual frequency plasma. Park teaches aluminum-containing layers are conventionally used as gate electrodes. Therefor, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Dakshina-Murthy by using C<sub>2</sub>H<sub>4</sub> and C<sub>2</sub>H<sub>6</sub> gases for forming an amorphous carbon film with a dual frequency plasma and extend the application of the method to include patterning of aluminum containing layer because C<sub>2</sub>H<sub>4</sub> and C<sub>2</sub>H<sub>6</sub> gases are conventionally used with dual frequency plasmas to form amorphous carbon and aluminum containing layers are conventionally used as gate electrodes. One of ordinary skill in the art would have been motivated to modify the method of Dakshina-Murthy as described above in order to extend application of an amorphous carbon mask for etching conductive gate electrodes including aluminum-containing electrodes which are known to reduce signal delay due to the low resistivity of the aluminum-containing material and because amorphous carbon offers higher etch selectivity as a mask than photoresist and hence allowing smaller and finer etch patterns to be achieved..